

Minutes of X3T11 HIPPI SWG, and HNF - Technical Committee (TC)  
April 10, 1996  
Palm Springs, California

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### 1. Opening remarks and introductions

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The Chairman, Don Tolmie of Los Alamos National Laboratory, opened the Technical Committee portion of the HNF meeting by thanking Jeff Stai and Western Digital for hosting this meeting. This group is constituted as both the HIPPI special working group (SWG) under X3T11, and the HIPPI Networking Forum (HNF) - Technical Committee (TC).

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### 2. Review / modify the draft agenda

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Draft agendas were distributed via e-mail before the meeting for both the HIPPI-6400 specific portion, and the HIPPI general portion. Hard copies were distributed at the meeting. No additional agenda items were added. Don Tolmie agreed to take the meeting minutes.

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### 3. Review Minutes of Previous Meeting

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Don questioned people as to whether they felt the need for minutes for the interim HIPPI-6400 meetings, and the general response was that they felt the need to have at least the general agreements documented.

The minutes of the X3T11 HIPPI SWG / HNF - TC meeting of February 6, 1996, in San Diego were reviewed. No additions or corrections were suggested.

Wally St. John of Los Alamos moved, and Roger Ronald of E-Systems seconded, to approve the minutes as written. Passed unanimously.

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### 4. Review of old action items

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The action items from the February, 1996, meeting were reviewed for the current status.

1. Michael McGowen of Essential Communications - Generate a HIPPI switch MIB. (Carryover)
2. Michael McGowen of Essential Communications - Update HIPPI-AC to work with HIPPI-SC and its recent changes. (Carryover)
3. John Renwick of NetStar - Issue a "last call for changes" for the IP over HIPPI RFC. Lacking

substantive changes, further the processing towards an IETF standard. (Carryover)

4. John Renwick of NetStar - Check status of ARP over HIPPI RFC with Phil Cameron of Essential and see if we can get the document moving. (Carryover)
5. Steve Quan of NASA Ames - Set up an e-mail reflector for a HIPPI Users Group. (Carryover)
6. Everyone - Do a last check on HIPPI-Serial, especially the optical parameters. Forward any recommended changes to Don Tolmie. (Carryover, see item 5.3)
7. Don Tolmie - Collect proposed changes to HIPPI-Serial Rev 2.2, integrate, and have a clean document ready for final vote at the April meeting. (Carryover, see item 5.3)
8. Don Tolmie of Los Alamos - Add the list of X3T11 members, and request that X3T11 conduct a letter ballot on HIPPI-SC Rev 3.0. (Done)
9. Don Tolmie of Los Alamos - Add the list of X3T11 members, and request that X3T11 conduct a letter ballot on HIPPI-ATM Rev 1.6. (Done)
10. Chairman - Update the SD-3 Project Proposal for HIPPI-MP and forward it to X3T11 for further processing. (Done)
11. Chairman - Update the SD-3 Project Proposal for HIPPI-6400-PH and forward it to X3T11 for further processing. (Done)
12. Don Tolmie of Los Alamos - Draft an amendment to HIPPI-FP to include a ULP-id for HIPPI-MP. (Carryover)
13. Everyone - Suggest changes to HIPPI-FP and bring in proposals for them. (Carryover)
14. Chairman - Put out a call over e-mail for proposed changes to HIPPI-FP. Include the question of whether the "Offset" parameter is used/needed. (Done)
15. Everyone - Consider changes to HIPPI-PH and be ready to vote at the April meeting whether to reaffirm without changes, or to revise the document. (Done)
16. Chairman - Put out a call over e-mail for proposed changes to HIPPI-PH. (Done)
17. Don Tolmie of Los Alamos - Update HIPPI-6400 Rev 0.0 to reflect the decisions of the February meeting. (Done)

## **5. HIPPI-Serial**

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### **5.1 Optics parameters updates to Rev 2.3**

HIPPI-Serial Rev 2.3 had been held at the February meeting for further editing, namely aligning the optics parameters with Fibre Channel. Steve Joiner of HP, and Tom Lindsay of Vixel, have been working on this. Steve supplied what he felt were the last parameters via e-mail on the day of this plenary, hence no updated document was available.

### **5.2 OH bits and other updates**

Don Tolmie, Ken Powell of Silicon Graphics, Jim Toy of BCP, and Eric Sheih of Essential have been word-smithing clause 7.3.3 concerning the OH bits and initialization. This work is closer to closure, but not yet complete.

### **5.3 Plans for forwarding**

The deadline for additional comments is April 24. Don Tolmie will integrate all of the comments into a final document for review, both via ftp and at the June plenary. Hopefully we can come to closure on this document and forward at the June plenary in Santa Fe. Since the document has already been through an X3T11 Letter Ballot, only an X3T11 meeting vote should be required to forward for an OMC review and first public review.

Tim Clay of Methode Electronics asked if there was a standard test pattern for HIPPI-Serial and was told there wasn't. If anyone had worked on one it probably would have been David Cunningham of HP. Tim took an action item to investigate a possible test pattern. It was felt that this was not serious enough that we should delay the document until it could be resolved, but should be documented in a Technical Report or other document.

## **6. IETF related items**

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### **6.1 IP over HIPPI, RFC 1374**

Nothing new. John Renwick of NetStar still has an action item to issue a "last call" for changes. Lacking substantive comments, John is tasked with furthering the processing within IETF. The next IETF step is for the document to receive an RFC number (different from 1374), and process the document as an IETF Draft Standard.

## **6.2 ARP over HIPPI**

Interoperability testing at the Supercomputing'95 show did not occur due to ARP server problems. John Renwick of NetStar has an action item to talk to Phil Cameron of Essential to check the status and see if we can get the document moving. Nothing new was reported at this April meeting.

## **6.3 HIPPI end-point MIB**

Mark Kelley of Cray Research is implementing the MIB, but was not done as of the February meeting. Based on his experience, we will consider document modifications before further processing in IETF. Nothing new was reported at this April meeting.

## **6.4 HIPPI switch MIB**

Michael McGowen of Essential Communications has the action item to develop this document. Essential is hiring, and hopefully this will help the document along.

## **7. HIPPI-AC**

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### **7.1 HIPPI-AC SD-3 project proposal status**

Don Tolmie reported that this SD-3 project proposal has been approved by OMC. A project number will be assigned after the X3 letter ballot is complete.

### **7.2 HIPPI-AC document status**

The document is in development within Essential Communications, and was not available at the meeting.

## **8. HIPPI-SC**

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### **8.1 Status of X3T11 Letter Ballot**

HIPPI-SC, Rev 3.0, passed its X3T11 Letter Ballot by a vote of 46 for, 0 opposed, and 15 not voting. Gary Stephens of FSI registered some editorial comments with his YES vote. Don Tolmie researched the relevant style guides and found that the present document is in acceptable form. Even so, Don has included some of the editorial comments to make it read better. The modified document was given revision number 3.1.

HIPPI-SC Rev 3.1 will be in the X3T11 mailing for the June meeting, will be voted on by X3T11 at that meeting. Then it goes for OMC review, first public

review, and review by the ANSI and ISO editors. In X3T11, Don was tasked with detailing the changes between this document and the one ISO presently has with the intent of either substituting the more current document or submitting the changes as letter ballot comments--the choice will depend upon where the document is in the processing cycle.

## **9. HIPPI API**

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### **9.1 Status of current work**

Steve Poole of Performance Group previously offered to work on an expanded API, both for a driver level, and at a higher level. Ken Morris of Essential Communications will be the document editor with Steve Poole as the technical lead. Neither was present at the meeting, and there was nothing to report.

## **10. HIPPI-ATM**

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### **10.1 Status of X3T11 Letter Ballot**

HIPPI-ATM Rev 1.6 passed its X3T11 Letter Ballot by a vote of 51 for, 0 opposed, and 10 not voting. As on HIPPI-SC, Gary Stephens made editorial comments and one technical comment (a "shall" was included in a reference to an ATM document which is not a "standard". Don Tolmie has fixed up this oversight, and included some of the suggested editorial changes to make it read better. Don will also fix up a version of the document for ISO processing. HIPPI-ATM Rev 1.7 will be in the X3T11 mailing for the June meeting, will be voted on by X3T11 at that meeting. Then it goes for OMC review, first public review, and review by the ANSI and ISO editors.

## **11. HIPPI-MP**

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HIPPI-MP, which stands for "Multiple Path", is intended to provide higher speed transfers by striping, using current HIPPI interfaces and switches.

### **11.1 Status of SD-3 Project Proposal**

At the February meeting we forwarded the SD-3 to X3T11. Rather than a Letter Ballot, X3T11 chose to vote on it at their April Plenary (the day after this meeting). Attendees at this HIPPI meeting were encouraged to attend that portion of the X3T11 Plenary to answer any questions about it, or deflect any criticisms.

### **11.2 Review HIPPI-MP Rev 0.1**

Don Tolmie distributed HIPPI-MP Rev 0.1. The changes from Rev 0.0 just fixed the figures (e.g., the minimum number of bytes in the D1\_Area). There was a good possibility that the work on merging the HIPPI-6400-PH Schedule\_Header and MPI header would also affect the terms used in HIPPI-MP, so work on HIPPI-MP was deferred.

## **12. HIPPI-FP**

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### **12.1 New ULP-id for HIPPI-FP**

With work on HIPPI-MP proceeding, a ULP-id for -MP is needed in -FP. Don Tolmie has not fulfilled his action item to draft an amendment for this change. It was noted that HIPPI-FP was up for its 5-year reaffirm/revise/withdraw action next year, so a revision was proposed instead of an amendment. It was also noted that the 'system' seemed to have trouble with single-page documents--loosing the present HIPPI-FP amendment several times.

Wally St.John of Los Alamos moved, and Joe Parker of Optivision seconded, that HIPPI-FP be revised. Motion passed, 10 for, 0 opposed.

### **12.2 Objections to removing the "Offset" parameter**

Per an action item from the February meeting, Don Tolmie put out a call over e-mail for any objections to removing the Offset parameter. Rami El Sebeiti of Hewlett-Packard in Grenoble replied that they used it. His message read:

"HP driver uses a D2\_Offset other than zero. This is for the level 2 interface which provides LLC 802.2 services. Using this interface, a user data packet is encapsulated:

- by the LLC header (3 bytes): DSAP (1 byte), SSAP (1 byte), Control (1 byte).
- LE header (24 bytes),
- FP header (8 bytes).

It was very convenient and more efficient for the transfer on the board, to have the data on 4 byte boundaries. And we use 5 bytes of D2\_Offset to complete the LLC header. I think that HIPPI could take advantage of the D2\_Offset, each time we have some curious size headers."

Based on this response, removing the D2\_Offset parameter has been dropped.

### **12.3 Other suggested changes to HIPPI-FP**

Michael McGowen of Essential Communications asked if Steve Poole still needed other ULP-ids for SCSI. Don Tolmie said that he thought the need had passed. Michael will follow up with Steve Poole to confirm if anything is needed.

The only changes we know of now are the ULP-id for HIPPI-MP, and possibly a ULP-id for SCSI. We will try to complete the changes in the next six months or so, and forward after that. Don Tolmie took an action item to draft an SD-3 Project Proposal for HIPPI-FP Revised.

### **13. HIPPI-PH Reaffirmation**

#### **13.1 Call for changes to HIPPI-PH**

Per an action item from the February meeting, Don Tolmie put out a call over e-mail for any suggested changes to HIPPI-PH, otherwise we would probably reaffirm it without changes. Ken Powell of Silicon Graphics suggested some changes over e-mail, that were also distributed and reviewed at this meeting. Ken's proposed text gave suggestions to avoid some problems that had plagued some implementations.

Roger Ronald of E-Systems moved, and John Renwick of NetStar seconded, that ANSI X3.183-1991, HIPPI-PH, be revised, with Ken Powell's text as the starting point. Motion failed, 1 for, 8 opposed, and 1 abstention.

John Renwick noted that all of Ken's proposed changes were editorial in nature, in essence documenting folklore and not changing any requirements. It was also pointed out that a revision would open up the whole document to possible changes, and dilute the HIPPI-6400 effort. While Ken Powell's text is good, putting it in the HIPPI-PH document may lead to more trouble than it is worth. It was suggested that putting the text, and other similar text, in a Technical Report or similar document, would probably be a better plan.

Joe Parker of Optivision moved, and Francois Gaullier of Hewlett-Packard seconded, that ANSI X3.183-1991, HIPPI-PH, be reaffirmed without change. Motion passed, 10 for, 0 opposed, 0 abstentions.

### **14. HIPPI-6400**

#### **14.1 Interim Working Group report**

Special working meetings on HIPPI-6400 were held March 12-13, at the SGI facility in Mountain View, CA, and April 9, in Palm Springs at the same location as this meeting. Work on HIPPI-6400-PH progresses, and work on HIPPI-6400-SC and copper for -PH is starting. See the separate minutes for these meetings for further details.

#### **14.2 Status of SD-3 Project Proposal**

At the February meeting we forwarded the SD-3 to X3T11. Rather than a Letter Ballot, X3T11 chose to vote on it at their April Plenary (the day after this meeting). Attendees at this HIPPI meeting were encouraged to attend that portion of the X3T11 Plenary to answer any questions about it, or deflect any criticisms.

### **15. HIPPI-6400-SC**

Roger Ronald of E-Systems has volunteered to be the Technical Editor for the document. It was felt that a separate document, and one in the same vein as HIPPI-SC, was warranted rather than trying to put the switch requirements for both HIPPI-800 and HIPPI-6400 in a single document.

Don Tolmie took an action item to draft an SD-3 Project Proposal for HIPPI-6400-SC.

### **16. Other items**

Chris Olson of Loral expressed a wish for a general glossary of all the networking terms, including such things as ATM terms, SCI, Fibre Channel, etc. While useful, it was felt that this was not the task of this committee. It was pointed out that much of this information could be found on the web in the specific pages for each of the technologies.

## 17. Future meeting schedule

### 17.1 May 9, Dallas, TX

Thursday, May 9 -

1 PM - 9 PM — HIPPI-6400

Friday, May 10 -

8AM - 2 PM — HIPPI-6400

The location is the Hyatt Regency DFW in Dallas, TX. The hotel is at the DFW airport so rental cars should not be needed. The phone number is (214) 615-6891, Fax (214) 615-6829, and the room rate is \$119 + 12% tax. The group name when making reservations is "E-Systems", and the cutoff date is April 25. Roger Ronald and E-Systems are the host.

### 17.2 June 1996, Santa Fe, NM

Monday, June 10 -

1 PM - 9 PM — HIPPI-6400

Tuesday, June 11 -

8 AM - 3 PM — HIPPI General, HNF, HIPPI-6400

3 PM - 6 PM — HIPPI-6400 Optical

6 PM - 9 PM — HIPPI-6400 Copper

The location is the La Fonda Hotel, 100 E. San Francisco, Santa Fe, NM 87501, phone (505) 982-5511, Fax (505) 988-2952. The rate is \$105 single or double, parking and tax included. The closing data for reservations is May 10. The group name is X3T11-Los Alamos. Don Tolmie and Los Alamos are the host.

### 17.3 August 5-8, Plenary week in Honolulu

Don Tolmie noted that the meeting host, Paul Boulay of Hitachi, has scheduled HIPPI meetings for Tuesday and Thursday, with the X3T11 plenary on Wednesday. Don questioned if this schedule was what we needed, or whether we should attempt to change it. The consensus was that Monday and Tuesday were preferred, and that Don should try to negotiate for those dates.

(Note - Don talked to the Paul Boulay, the Honolulu host, and was able to change the dates to Monday, August 5, 9 AM to 5 PM, and Tuesday, August 6, 9 AM to 5 PM. Don has also asked for a meeting room for either Monday or Tuesday evening.)

The schedule for the rest of 1996 is listed below. The Plenary meetings include HIPPI-6400, an HNF plenary, and all other HIPPI items. The Interim meeting cover just HIPPI-6400 items.

|           |         |                   |         |
|-----------|---------|-------------------|---------|
| Jul 10-11 | Interim | Mountain View, CA | SGI     |
| Aug 5-6   | Plenary | Honolulu, HI      | Hitachi |

|           |         |                          |            |
|-----------|---------|--------------------------|------------|
| Sep 11-12 | Interim | Albuquerque, NM          | Los Alamos |
| Oct 7-8   | Plenary | St. Petersburg Beach, FL | AMP        |
| Nov 6-7   | Interim | Phoenix, AZ              | Loral      |
| Dec 2-3   | Plenary | Rochester, MN            | IBM        |

The following 1997 X3T11 plenary week dates are firm, but some locations and hosts are still fluid. No dates, locations, or hosts have been identified for any interim HIPPI-6400 meetings.

|           |                      |         |
|-----------|----------------------|---------|
| Feb 3-7   | San Jose             | Sun     |
| Apr 7-11  | Palm Springs, CA     | Brocade |
| Jun 9-13  | Seattle, WA          | Boeing  |
| Aug 11-15 | Honolulu, Hawaii(??) | ??      |
| Oct 6-10  | Tucson, AZ           | FSI     |
| Dec 1-5   | Orlando, FL          | DPT     |

## 18. Review action items

1. Michael McGowen of Essential Communications - Generate a HIPPI switch MIB.
2. Michael McGowen of Essential Communications - Update HIPPI-AC to work with HIPPI-SC and its recent changes.
3. John Renwick of NetStar - Issue a "last call for changes" for the IP over HIPPI RFC. Lacking substantive changes, further the processing towards an IETF standard.
4. John Renwick of NetStar - Check status of ARP over HIPPI RFC with Phil Cameron of Essential and see if we can get the document moving.
5. Steve Quan of NASA Ames - Set up an e-mail reflector for a HIPPI Users Group.
6. Everyone - Do a last check on HIPPI-Serial, especially the optical parameters. Forward any recommended changes to Don Tolmie by April 24.
7. Don Tolmie - Collect proposed changes to HIPPI-Serial Rev 2.3, integrate, and have a clean document ready for final vote at the June meeting.
8. Tim Clay of Methode Electronics - Investigate a good test pattern for HIPPI-Serial optical components.
9. Don Tolmie of Los Alamos - Draft an SD-3 Project Proposal for a revision of HIPPI-FP.
10. Michael McGowen of Essential Communications - Check with Steve Poole to see if one or more HIPPI-FP ULP-id(s) are needed to support SCSI.
11. Everyone - Suggest changes to HIPPI-FP and bring in proposals for them.

12. Don Tolmie of Los Alamos - Update HIPPI-SC to Rev 3.1 with X3T11 editorial comments. Get it ready for OMC and first public review.
13. Don Tolmie of Los Alamos - Update HIPPI-ATM to Rev 1.7 with X3T11 comments. Get it ready for OMC and first public review.
14. Don Tolmie of Los Alamos - Fix up an ISO version of HIPPI-ATM.
15. Don Tolmie of Los Alamos - Draft an SD-3 Project Proposal for HIPPI-6400-SC.

#### **19. Continue work on HIPPI-6400**

We were able to finish the main agenda by 11:50 AM so continued on HIPPI-6400 items until 5 PM. See the HIPPI-6400 minutes for details.

#### **Notes from X3T11 Plenary following the HNF-TC**

The X3T11 Plenary meet the next day, i.e., April 11. HIPPI related items are reported here for your convenience, the definitive record is the X3T11 minutes.

By roll-call votes of 46 for, 0 opposed, and 18 absent, X3T11 forwarded the SD-3 Project Proposals for HIPPI-MP and HIPPI-6400-PH to OMC for further processing.

By a roll-call vote of 44 for, 0 opposed, and 20 absent, X3T11 agreed to take the appropriate steps to reaffirm without change ANSI X3.183-1991, HIPPI-PH.

#### **Attendance**

|                   |                              |
|-------------------|------------------------------|
| Michael Griffin   | 3M Co.                       |
| Scott Stevens     | ComScope, General Instrument |
| Tim Johnson       | Cray Research                |
| Ed Grivna         | Cypress Semiconductor        |
| Michael McGowen   | Essential Communications     |
| Roger Ronald      | E-Systems                    |
| Francois Gaullier | Hewlett-Packard              |
| Steve Joiner      | Hewlett-Packard OCD          |
| Ken Hahn          | Hewlett-Packard              |
| Christie Rice     | Honeywell                    |
| Henry Brandt      | IBM                          |
| Jonathan Thatcher | IBM                          |
| Barry Wightman    | Lion Rock, Inc.              |
| Chris Olson       | Loral Defense Systems        |
| James Hoffman     | Los Alamos National Lab      |
| Wally St. John    | Los Alamos National Lab      |
| Don Tolmie        | Los Alamos National Lab      |
| Tim Clay          | Methode Electronics          |
| Pat Gilliland     | Methode Electronics          |
| Richard O'Connell | Myriad Logic                 |
| Stephen Quan      | NASA Ames Research Center    |
| John Renwick      | NetStar                      |
| Joe Parker        | Optivision                   |
| Clive Towndrow    | PsiTech Inc.                 |
| Art Beckman       | Silicon Graphics             |
| Greg Chesson      | Silicon Graphics             |
| Bob Newhall       | Silicon Graphics             |
| Dave Parry        | Silicon Graphics             |
| James Pinkerton   | Silicon Graphics             |
| Scott Kurimoto    | Sumisho Electronics          |
| Isao Morishita    | Sumisho Electronics          |
| Brian Hackler     | Thomas & Betts               |
| Don Knasel        | US Connector                 |
| Stan Swirhun      | Vixel Corp.                  |